

I 363.73  
I 29m  
c.3

Illinois  
Environmental  
Protection  
Agency

169409-50  
Office of Govt. & Community Affairs  
2200 Churchill Road  
P.O. Box 19276  
Springfield, IL 62794-9276

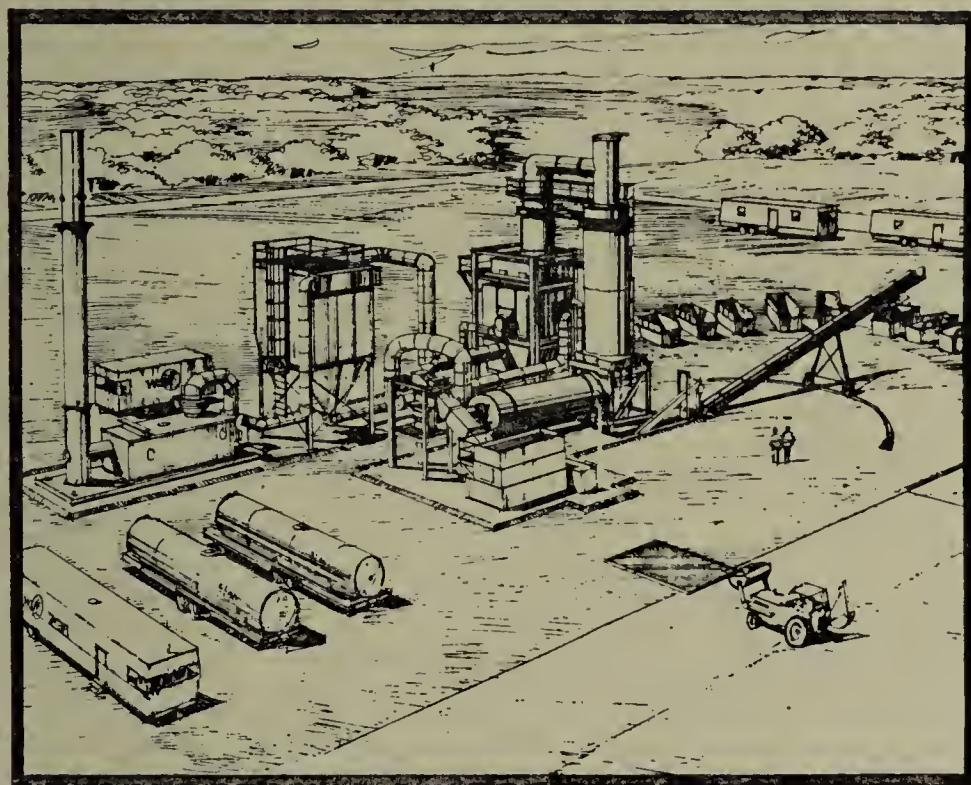
Summer 1987

# ILLINOIS STATE LIBRARY

AUG 3 1987

ILLINOIS DOCUMENTS

## The Illinois Mobile Incineration Program



## ***The Problem***

Since the turn of the century, Illinois has been a leading industrial and agricultural state. Illinois is home to large manufacturing centers representing all basic industries. Metal finishing and electroplating, petroleum refining, paint, automotive, plastics and pharmaceutical manufacturing are among industries in Illinois which produce hazardous by-products. Another major state industry, agriculture, also generates hazardous wastes through the use of fertilizers and pesticides.

For several decades up until the early 70's these and other industries operated in the absence of environmental regulations. Prior to state and national regulation, industrial disposal practices left the country with thousands of old, abandoned disposal sites, many are laced with chemicals that threaten the environment and may pose long term threats to public health.

## ***"Clean Illinois"***

"Clean Illinois" is the nickname for the state's hazardous waste cleanup program. This state cleanup initiative represents the most ambitious hazardous waste cleanup program in Illinois history. The "Clean Illinois" program proposed by Governor James R. Thompson and passed by the Illinois legislature in 1984 provided \$20 million over three years to target and cleanup abandoned and uncontrolled hazardous waste sites across the state.

In 1985, Governor Thompson's "Build Illinois" program was enacted by the legislature. Through this infrastructure and economic development program, the state's hazardous waste cleanup initiative received a substantial \$90 million boost to further state cleanup actions. These programs and the state hazardous waste fund are the public sources of revenue to finance this statewide hazardous waste cleanup effort.

During the first year of the "Clean Illinois" program, the Illinois EPA began to realize the tremendous amount of hazardous waste to be

landfilled as a result of state-funded cleanups. Potential problems with environmental liability, State and federal landfill disposal restrictions and transportation and disposal costs caused the Illinois EPA to revise its hazardous waste cleanup policy.

The Agency now requires the use of alternative treatment technologies such as incineration and is less dependent on landfill disposal of hazardous waste generated from cleanup operations. Two stationary commercial incinerators are located in Illinois, but their waste management capacity is limited. This limited capacity, plus the high cost of transporting and handling large volumes of contaminated soils, sludges and debris caused the Illinois EPA to utilize mobile incineration systems. These systems are a preferred treatment alternative in the cleanup of hazardous and toxic waste sites.

As part of the State's hazardous waste cleanup program, IEPA purchased mobile incineration services to better manage hazardous and toxic wastes generated from state-funded cleanup activity. Mobile incineration can be utilized at several hazardous waste sites. Some of these sites appear on the national priority list (NPL) of Superfund sites and the State Remedial Action Priorities List (SRAPL).

## ***Why Mobile Incineration?***

The Illinois EPA believes there are several good reasons for using mobile incineration as an alternative to landfill disposal:

1. The incinerator is totally transportable, meaning that the contractor will haul it to the site, assemble it, burn the contaminated wastes, disassemble it, and transport it to another hazardous waste site.
2. Unlike landfill disposal where hazardous and toxic wastes remain in the environment, incineration is a permanent solution which destroys the hazardous components of waste.

3. The system provides nearly complete combustion of all organic contaminants fed into the system, including persistent, non-biodegradable compounds as well as debris from cleanup operations sludges and soils
4. The process has a proven track record. The same type of technology is used at several commercial treatment facilities.
5. By destroying hazardous substances at the place where they are found, the State can limit its environmental liability associated with landfill disposal of cleanup residues and eliminate their transportation on state highways.

## ***How will the incinerator work?***

The incinerator has four main components: the waste feed system, the primary chamber, the secondary chamber, and the pollution control system.

The waste feed system consists of a hopper, covered conveyor belt, a feed screw for solid waste (e.g. soil) and if required, a pump and atomizer for liquid waste. If the incinerator is not working properly the waste feed system will automatically shut off.

The waste first enters the primary chamber (rotary kiln) which is a cylinder with a burner at one end. The cylinder slowly rotates, operating at an optimum temperature of 1800 degree Fahrenheit. The purpose of this chamber is to vaporize (turn to gas) the volatile hazardous organic material in the waste.

The burned waste or ash will be discharged from the rotary kiln. The gas including the vaporized organics will continue into the secondary chamber where it will be heated to a temperature of up to 2200 degrees Fahrenheit. This high temperature will destroy essentially all the hazardous components in the gas.

Exhaust gases are cooled and passed through pollution control equipment which is designed to remove particulates (dust and particles of materials) and hydrogen chloride (which may form from the hydrogen and chlorine released when chlorinated organic wastes are incinerated).

T363.73  
139m  
C. 3

## ***Are there visible emissions from the incinerator?***

Yes, a white plume, primarily water vapor may be observed during the operation of the incinerator.

## ***Will air emissions from the incinerator be monitored?***

Yes, there are two types of air pollution monitoring.

1. Prior to regular incinerator operation, a trial burn must prove that all stack emissions meet strict State and federal air pollution standards. The incinerator cannot operate without this demonstration.
2. During the actual incineration of wastes, selected chemical compounds and elements will be monitored continuously to verify that the equipment is working properly. If certain limitations are exceeded, the incinerator will be immediately shut down until a cause is found and corrected.

## ***How can I get more information?***

Mobile incineration is an important part of the Illinois EPA hazardous waste cleanup program. The Agency is ambitiously pursuing incineration and other alternative treatment technologies for use at abandoned and uncontrolled hazardous waste sites. For additional information about mobile incineration contact the Illinois EPA, Office of Government and Community Affairs, 2200 Churchill Road, P.O. Box 19276, Springfield, Illinois 62794-9276. Telephone 217/782-5562.

ILLINOIS STATE LIBRARY



5-1129 00454 9028

UNIVERSITY OF ILLINOIS-URBANA



3 0112 122541037